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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/776,871	02/06/2001	Amir Gil	01/21631	8434

7590 12/31/2002

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SUITE 207
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ARLINGTON, VA 22202

EXAMINER

SHAH, DEVAANG

ART UNIT

PAPER NUMBER

3737

DATE MAILED: 12/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/776,871	GIL ET AL.
	Examiner Devaang Shah	Art Unit 3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 27 October 2002.
 - 2a) This action is FINAL. 2b) This action is non-final.
 - 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- Disposition of Claims**
- 4) Claim(s) 1-61, 169-214, 247, 249, 251, 252, 254, 255, 262-264 and 268-271 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 - 5) Claim(s) _____ is/are allowed.
 - 6) Claim(s) See Continuation Sheet is/are rejected.
 - 7) Claim(s) 33-39, 46, 47, 188-194, 199 and 200 is/are objected to.
 - 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 06 February 2001 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims rejected are 1-17,21-29,31,32,40-44,48-61,169-187,195-198,201-214,247,249,251,252,254,255,262-264 and 268-271.

DETAILED ACTION***Drawings***

1. Color photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84(a)(2) is granted permitting their use as acceptable drawings. In the event that applicant wishes to use the drawings currently on file as acceptable drawings, a petition must be filed for acceptance of the color photographs or color drawings as acceptable drawings. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and an amendment to the first paragraph of the brief description of the drawings section of the specification which states:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the U.S. Patent and Trademark Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application

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designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1, 2, 5-17, 21-23, 25-29, 40-44, 48-61, 169, 170, 173-182, 184, 185, 195-198, 201-214, 247, 251, 252, 254, 255, 262-264, and 269-271 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,233,480 B1 to Hochman et al. Hochman et al. disclose methods and apparatus for optically imaging neuronal tissue and activity. The method involves illuminating an exposed cortex of a brain of a subject with incident light, acquiring a reflectance spectrum, stimulating the brain of the subject, after which more reflectance spectra are acquired, and generating images highlighting differences among the spectra to highlight functional brain regions. The respective spectra are averaged during processing. The method employs at least one filter to adjust the spectrum of the incident light. The images are generated by attributing to the pixels in the images a distinctive color or intensity according to oxygen saturation. The subject may be awake and anesthetized, and asked to perform a task such as tongue wiggling, or the peripheral nervous system may be stimulated. Reference spectra are co-displayed with acquired functional images by superimposition. Thresholding is done via an image stretch. Blood volume differences of about at least 10% are highlighted. After stimulation, reflectance spectra are acquired between about 5 and 30 seconds. Spectral data may be spatially registered via image warping techniques. The apparatus includes all the elements needed to carry out the method. The apparatus employs optical

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markers to aid in manual alignment or mathematical manipulation, and to account for fluctuations in illumination (see Hochman et al, full disclosure).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3, 4, 24, 31, 32, 171, 172, 183, 186, 187, 249, and 268 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hochman et al.

Referring to claims 3 and 171, Hochman et al. employ a spatial resolution sufficient to detect single neuronal cells or nerve fiber bundles (column 5, lines 42-46). The spectral resolution is not specified. However, it would have been obvious to one having ordinary skill in the art at the time of the invention to use a spectral resolution of range 1 nm: 50 nm since Hochman et al. is carrying out the same method as the invention.

Referring to claims 4 and 172, it would have been obvious to one having ordinary skill in the art at the time of the invention to use an interferometer-based spectral imaging device because both an interferometer-based spectral imaging device and a filter-based spectral imaging device are capable of carrying out the method and are well known in the art.

Referring to claim 14, Hochman et al. disclose that a second monitor is used to aid in viewing of a sequence of images (column 17, lines 12-14). Though it is not stated whether images are "co-displayed side by side," one having ordinary skill in the art can infer that possibility due to the basic nature of this display mechanism.

Referring to claims 24, 183, and 249, the method of Hochman et al. is carried out using a similar time frame as that of the invention. Therefore it is obvious that N brain beats would occur during spectral data acquisition, and that $N=\{2-40\}$.

Referring to claims 31, 32, 186, and 187, 5-15 nm f.w.h.m. filters are well known in the art of spectral imaging and would have been obvious to use with a spectral imaging system used to carry out the method.

Referring to claim 268, the display of useful text in conjunction with images is well known in the art and it would have been obvious to one having ordinary skill in the art to use text to identify key areas of the image.

Allowable Subject Matter

4. Claims 33-39, 46, 47, 188-194, 199, and 200 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

U.S. Patent No. 6,196,226 B1 to Hochman et al.

U.S. Patent No. 5,995,857 to Toomim et al.

U.S. Patent No. 5,215,095 to Macvicar et al.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devaang Shah whose telephone number is 703-306-0333. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on 703 308-3256. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3590 for regular communications and 703-308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.

DS *DS*
December 24, 2002


Marvin M. Lateef
Supervisory Patent Examiner
Group 3700